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1996 tailings removal
project

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FINAL REPORT
BLACKFOOT TAILINGS REMOVAL PROJECT
PROJECT NO. DEQ-AMRB 95-004

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FINAL REPORT
BLACKFOOT TAILINGS REMOVAL PROJECT
PROJECT NO. DEQ-AMRB 95-004

Prepared for:

Montana Department of Environmental Quality
Reclamation Division
Abandoned Mine Reclamation Bureau

Prepared by:

Maxim Technologies, Inc.
P.O. Box 4699
1610 B Street
Helena, Montana 59604

December 1996

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1.0 INTRODUCTION

The Blackfoot Tailings (also known as the Lone Point Tailings) site is located approximately three miles west of Lincoln, Montana, in Lewis and Clark County, along the north side of State Highway 200. The site is in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ Section 29 and NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 28, T14N R9W and located on fairly level terrain west of the highway.

The tailings material apparently originated from a small mill located adjacent to the site which reportedly operated during the early 1900s. Tailings materials contain elevated concentrations of arsenic, cadmium, chromium, copper, lead, and zinc as well as other metal contaminants. Mill tailings covered an area of approximately $\frac{1}{2}$ -acre and range in thickness from less than one foot to nine feet with an average thickness estimated to be six feet. The pH of the tailing material was reported to be less than 3.5 standard units. The tailings deposit was ringed by a natural-earth berm several feet in height.

Removal of the Blackfoot Tailings from their current location is proposed to eliminate potential transport of metals from the tailings to groundwater and surface water. Tailings materials were amended in-place using quicklime prior to transport of the tailings to American Smelting and Refining Company's (ASARCO) tailings repository located at the Paymaster Mine site approximately 15 miles east of Lincoln and $\frac{1}{4}$ -mile south of Highway 200. By placing the treated tailings in an engineered repository, infiltration, runoff and groundwater contact with the treated tailings will be minimized. The existing earthen berm at the impoundment site will be regraded and all disturbed areas reclaimed.

2.0 PROJECT PLANNING AND CONSTRUCTION

The following people/firms have contributed to the coordination, design, execution, and inspection of the Blackfoot Tailings Removal Project:

Project Coordination & Design:	Maxim Technologies, Inc. Helena, Montana
Engineering Plan Preparation:	Maxim Technologies, Inc.
Contractor:	Davidson & Company Helena, Montana

Quality Control Inspection:

Maxim Technologies, Inc.

Aaron Shewman, Resident Project Rep.

Jeremiah B. Bowser, P.E., Project Engineer

AMRB Project Coordinator:

Joel Chavez

3.0 CHRONOLOGICAL LISTING OF EVENTS

Construction activities related to the Blackfoot Tailings Removal Project commenced on September 18, 1996, and were completed on November 18, 1996. Construction activities were generally performed in accordance with contract specifications. The following section describes the sequence of events for the project.

3.1 PRE-BID CONFERENCE

A pre-bid conference and site showing was held on Wednesday, August 7, 1996, at the Blackfoot Tailings Project site. Eight potential bidders attended the conference.

3.2 PROJECT BIDS

Montana Department of Environmental Quality, Abandoned Mine Reclamation Bureau personnel publicly opened bids for the Blackfoot Tailings Removal Project on August 15, 1996. The three lowest bids are presented below. Complete bid tabulation results are presented in Appendix A.

◆ Davidson & Company	\$ 121,290.14
◆ High Mountain Construction	\$ 158,300.00
◆ Concrete Septic Tank Company	\$ 162,764.17

3.3 PROJECT CHRONOLOGY

The following chronology presents the sequence of events which led to completion of the project.

Notice to Proceed: September 18, 1996

Construction Start-up: September 18, 1996

Certificate of Completion:	November 18, 1996
Final Inspection:	November 14, 1996
Final Acceptance:	November 18, 1996

4.0 PROJECT CONSTRUCTION

4.1 DESCRIPTION OF PROJECT PLAN

Tailings materials were treated through addition of approximately 5% by weight quicklime followed by thorough mixing. The treated tailings were then allowed to cure for 24 hours before transport to the Paymaster Repository. Upon completion of tailings treatment and removal, an appropriate volume of clean backfill material was placed inside the former impoundment before the earthen berm surrounding the tailings impoundment was recontoured to achieve positive drainage. All disturbed areas were fertilized, seeded and mulched according to the project specifications. The construction drawings are included in Appendix B.

4.2 CONTRACTOR'S OPERATION

Davidson and Company performed the work utilizing a crew of three full-time personnel supplemented by part-time truck drivers during the construction phase of the project. Mr. John Davidson was the field superintendent. Two equipment operators, one laborer, and up to six truck drivers were utilized during the construction project. The Contractor used the following equipment:

- Case 580L Backhoe
- John Deere 450-C Dozer
- Komatsu D65-EX Dozer
- Komatsu PC200 Excavator

The Contractor began work at the site on September 18, 1996. An access road off of Lone Point Road was constructed by stripping and stockpiling topsoil before road mix material was placed on a layer of road stabilization fabric. An access ramp was constructed over the earthen berm and all treatment and loading activities were conducted inside the bermed impoundment.

Tailings materials were removed to the visually identified native soil underlying the tailings and stockpiled at the south end of the impoundment. A decontamination and treatment area was

constructed at the north end of the impoundment. Lifts consisting of approximately 100 cubic yards of tailings material (approximately six inches thick) were placed in the treatment area and mixed with quicklime. To achieve the contract required liming rate of 5% by weight (tons per 1,000 tons), the weight of the tailings material was calculated from material testing results (70% maximum dry density) and the appropriate amount of calcium oxide was added to the treatment area by counting the number of full excavator buckets. The volume to weight conversion was made from material testing results supplied by Continental Lime.

Mixing was achieved using the excavator bucket to stir the calcium oxide into the material and by making several passes over the treatment area with the tracked bulldozer. Quality control was maintained by measuring the field pH of the treated tailings lift and by laboratory analysis. Numerous pH measurements were made on each lift during the first few days of treatment to assure the mixing process was adequate and then periodically throughout the duration of the project. A sample of the treated tailings was also collected from the initial treated lift and moisture density relationship determined in the laboratory. In addition, a treated sample was collected from the repository by the Montana Department of Environmental Quality and analyzed for acid-base account. All of the quality control samples met the required specifications.

After mixing up to 8 lifts, the treated tailings were stockpiled near the decontamination area for 24 hours before transport to the repository. As each area of the impoundment was excavated to native soil, quicklime was spread over the exposed surface prior to backfilling. Approximately 5 tons of quicklime was used to amend the exposed native soil surface in the ½-acre area.

A total of 8,412 cubic yards of treated tailings were transported and placed at the Paymaster Repository. After tailings removal, approximately 2,800 cubic yards of clean backfill material was placed.

Clearing and grubbing involving removal of selected trees and brush was performed along the lengths of the berm which would be regraded to achieve drainage toward the east and south. A drainage trench was excavated at the south end of the former impoundment to allow runoff to drain from the regraded area. Exposed native soils along the east edge of the impoundment were neutralized using 1.5 tons quicklime. All disturbed areas were fertilized, seeded and mulched according to project specifications.

Also included in the project was closure of an abandoned shaft located northwest of the project site. For the closure of this shaft, debris was removed from the shaft and the shaft backfilled with approximately 10 cubic yards of rock fill.

5.0 PROJECT COSTS

5.1 PAYMENT REQUESTS

The total contract cost for the Blackfoot Tailings Removal Project was \$ 206,011.92. The three change orders written for the project are contained in Appendix C. The original bid price was \$ 121,290.14 compared to the engineers' estimate of \$ 132,380.00. The primary difference between the original bid price and the contract total was the increased volume of treated tailings transported to the Paymaster. Table 5-1 summarizes the approved payment requests issued for the project. Appendix D contains copies of the payment requests, Affidavit on Behalf of Contractor, Certificate of Completion, Certificate of Substantial Completion, Certificate of Acceptance and Consent of Surety Company to Final Payment.

TABLE 5-1
PAYMENT REQUEST SUMMARY
Blackfoot Tailings Removal Project

PAYMENT REQUEST NO.	DATE	AMOUNT
1	10-06-96	\$ 40,151.77
2	11-18-96	\$ 165,860.15
Total Contract Amount		\$ 206,011.92

5.2 PROJECT QUANTITIES AND COSTS

Table 5-2 contains a summary of project quantities and costs associated with each task.

TABLE 5-2
SUMMARY OF PROJECT QUANTITIES AND COSTS
Blackfoot Tailings Removal Project

Construction Item	Unit	Quantity	Unit Cost	Total Cost
Mobilization, Bonding and Insurance	LS	1.0	\$ 31,680.00	\$ 31,680.00
Clearing and Grubbing	LS	1.0	\$ 5,062.32	\$ 5,062.32
Excavate, Treat and Transport Tailings	CY	8,412	\$ 16.05	\$ 135,012.60
Regrade Berm	CY	900	\$ 15.92	\$ 14,328.00
Provide Backfill	CY	2,800	\$ 5.93	\$ 16,604.00
Add Quicklime to Native Soil	LS	1.0	\$ 500.00	\$ 500.00
Mix Quicklime on Graded Surface	LS	1.0	\$ 500.00	\$ 500.00
Construct Drainage Trench	LS	1.0	\$ 705.00	\$ 705.00
Close Mine Opening	EA	1.0	\$ 450.00	\$ 450.00
Fertilize, Seed and Mulch	AC	0.5	\$ 2,340.00	\$ 1,170.00
TOTAL COST				\$206,011.92

Note: LS = Lump Sum; AC = Acre; CY = Cubic Yard; EA = Each

* Item No. 6, Install Corrugated Steel Pipe, was eliminated via Change Order No. 3.

5.3 COST ANALYSIS

Table 5-3 presents an analysis of project costs. Along with construction costs, this summary includes engineering costs such as preparation of an Environmental Assessment, site survey, tailings sampling, preparation of the bid package and final grade design, construction administration and inspection.

TABLE 5-3
COST ANALYSIS
Blackfoot Tailings Removal Project

ENGINEERING

EA Preparation, Site Survey and Sampling	\$ 11,040.00
Design and Bid Package Preparation	\$ 7,944.00
Construction Administration and Inspection	\$ 12,366.00

TOTAL ENGINEERING FEE **\$ 31,350.00**

TOTAL CONSTRUCTION COST **\$ 206,011.92**

TOTAL PROJECT COST **\$ 237,361.92**

Total Engineering Fee/Total Construction Cost	15.2%
Total Construction Cost/Total Project Cost	86.8%
Construction Inspection Cost/Total Construction Cost	6.0%

6.0 PROJECT SUMMARY

6.1 SITE CONDITIONS AFTER COMPLETION

Joel Chavez, the AMRB Project Coordinator, and Aaron Shewman, Maxim's project representative, performed a final inspection of the project on November 12 and 14, 1996, respectively. The work completed during the project was constructed in general accordance with specifications contained in the Standard Construction Specifications for Abandoned Mine Reclamation and the bid document for the project.

6.2 PHOTOGRAPHIC RECORD

Print and slide photographs were taken of selected portions of the project before, during and after construction activities were completed. The photographic record is contained in Appendix E.

APPENDIX A

BID TABULATIONS

Blackfoot Tailings Removal Project

BLACKFOOT TAILINGS REMOVAL PROJECT
LEWIS AND CLARK COUNTY, MONTANA

DEQ/AMRB 95-04
DATE 08/15/96

BID TABULATIONS				ENGINEER'S ESTIMATE		DAVIDSON & COMPANY		HIGH MOUNTAIN CONSTRUCTION		CONCRETE SEPTIC TANK CO.	
Item Number	Estimated Quantity	Unit	Description	Unit Price	Total Price						
1.	1	LS	MOBILIZATION, BONDING, AND INSURANCE	XXXXXX	0.00	31,680.00	31,680.00	20,000.00	20,000.00	32,576.67	32,576.67
2.	1	LS	CLEARING AND GRUBBING	XXXXXX	0.00	5,062.32	5,062.32	15,000.00	15,000.00	9,000.00	9,000.00
3.	3750	CY	EXCAVATE, TREAT AND TRANSPORT TAILINGS TO PAYMASTER		0.00	16.05	60,187.50	26.00	97,500.00	28.97	108,637.50
4.	900	CY	REGRADE BERM		0.00	15.92	14,328.00	2.00	1,800.00	2.25	2,025.00
5.	1000	CY	PROVIDE BACKFILL		0.00	5.93	5,930.00	18.00	18,000.00	9.25	9,250.00
6.	1	EA	INSTALL CORRUGATED STEEL PIPE		0.00	2932.32	2,932.32	1500.00	1,500.00	375.00	375.00
7.	0.5	AC	FERTILIZE, SEED AND MULCH		0.00	2340.00	1,170.00	9000.00	4,500.00	1800.00	900.00
TOTAL					0.00		121,290.14		158,300.00		162,764.17

BLACKFOOT TAILINGS REMOVAL PROJECT
LEWIS AND CLARK COUNTY, MONTANA

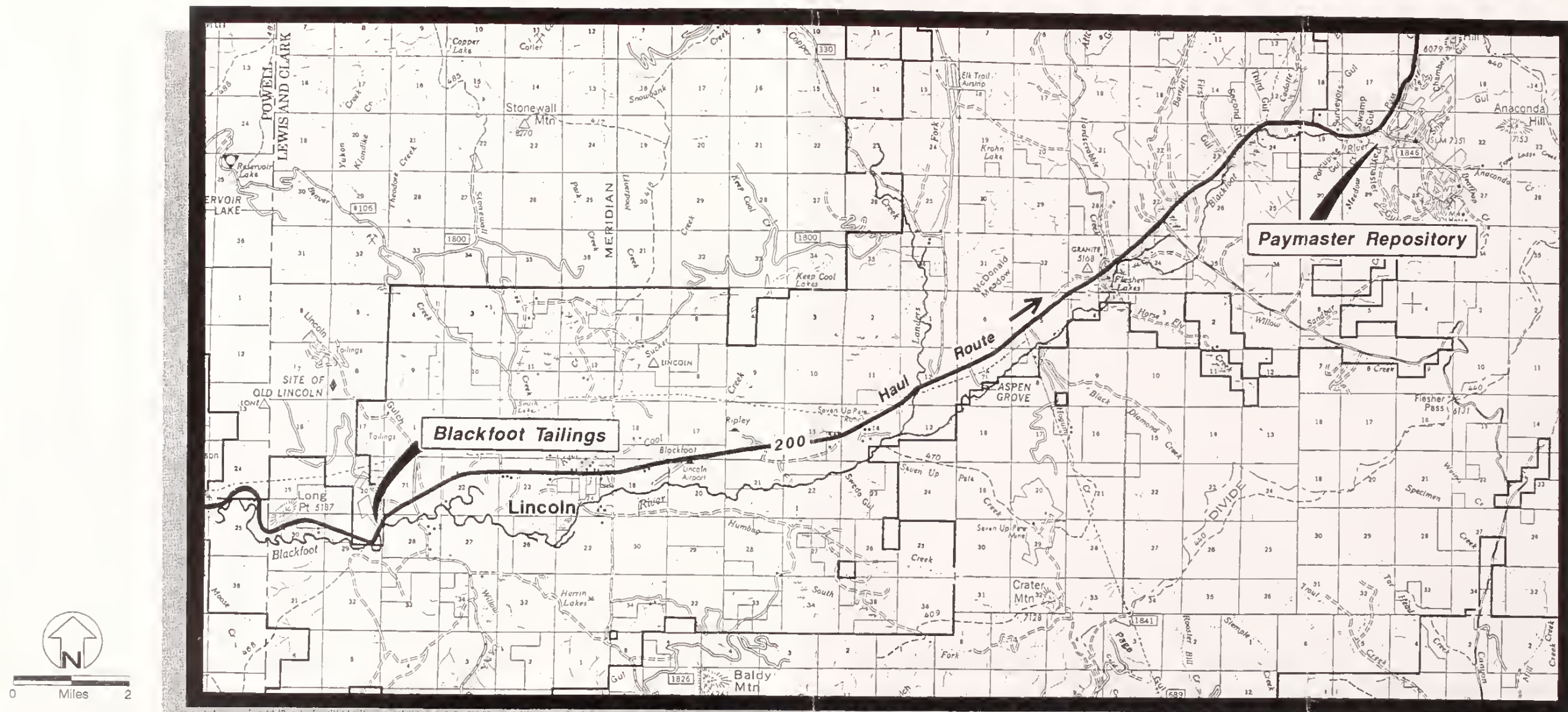
DEQ/AMRB 95-04
DATE 08/15/96

BID TABULATIONS				ENGINEER'S ESTIMATE		G.M. CONSTRUCTION		SHUMAKER TRUCKING & EXCAVATING INC.		
Item Number	Estimated Quantity	Unit	Description	Unit Price	Total Price					
1.	1	LS	MOBILIZATION, BONDING, AND INSURANCE	XXXXX	0.00	16,025.00	16,025.00	75,000	75,000.00	0.00
2.	1	LS	CLEARING AND GRUBBING	XXXXXXXX	0.00	10,500.00	10,500.00	7,500	7,500.00	0.00
3.	3750	CY	EXCAVATE, TREAT AND TRANSPORT TAILINGS TO PAYMASTER		0.00	31.90	119,625.00	20.00	75,000.00	0.00
4.	900	CY	REGRADE BERM		0.00	6.00	10,000.00	3.00	2,700.00	0.00
5.	1000	CY	PROVIDE BACKFILL		0.00	10.00	10,000.00	15.00	15,000.00	0.00
6.	1	EA	INSTALL CORRUGATED STEEL PIPE		0.00	625.00	625.00	4,000	4,000.00	0.00
7.	0.5	AC	FERTILIZE, SEED AND MULCH		0.00	2,000.00	1,000.00	5,000	2,500.00	0.00
TOTAL					0.00		163,175.00		181,700.00	0.00

APPENDIX B

SITE MAP, CONSTRUCTION AND AS-BUILT DRAWINGS Blackfoot Tailings Removal Project

BLACKFOOT TAILINGS REMOVAL PROJECT



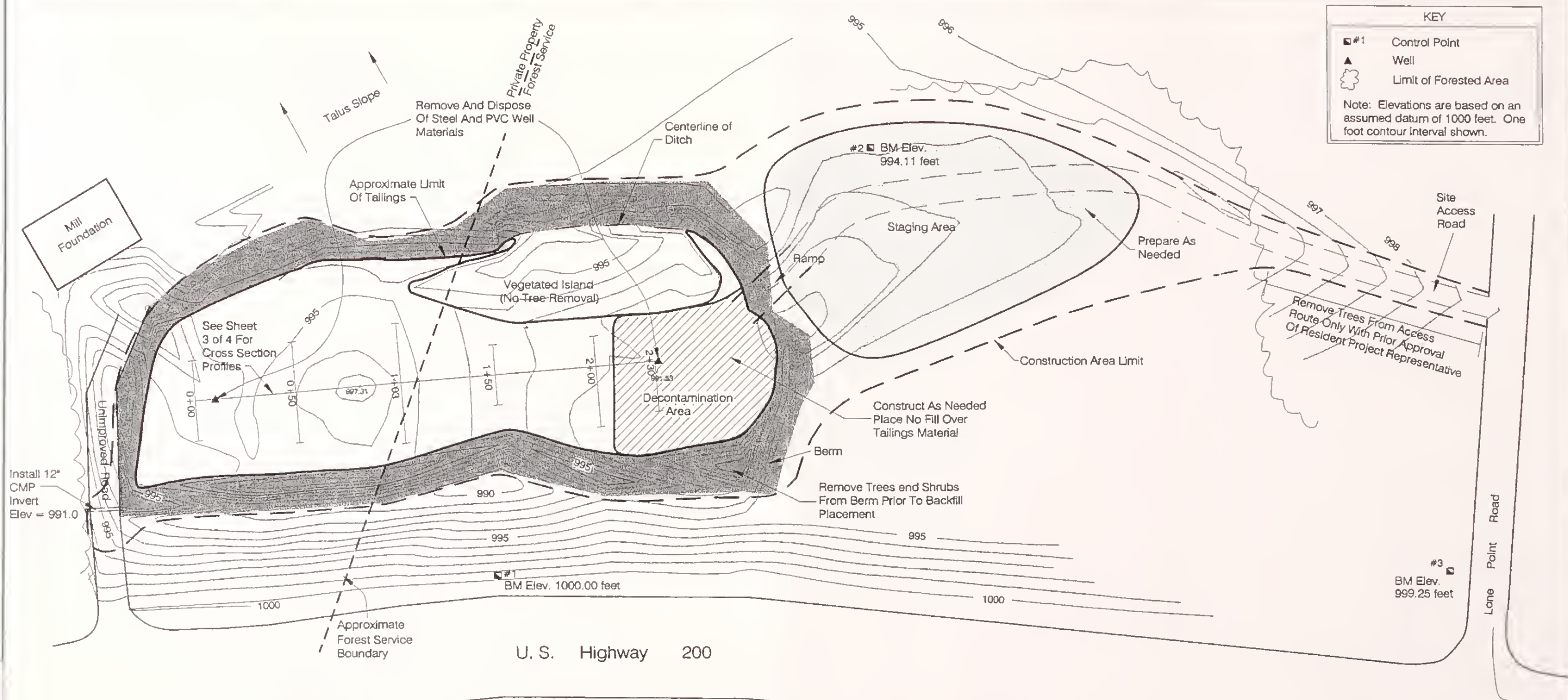
From USDA Forest Service, Helena National Forest

Prepared For: State of Montana
Department of Environmental Quality
Abandoned Mine Reclamation Bureau
Helena, Montana

Prepared By: **MAXIM** Technologies Inc
PO Box 4699
Helena, Montana 59604

Index of Plan Sheets

Cover and Index	Sheet 1
Site Map.....	Sheet 2
Volume Cross Sections.....	Sheet 3
Final Grading Plan.....	Sheet 4



CONSTRUCTION NOTES - BASE BID:

- (1) Construction Area: The Contractor may not perform any construction activities beyond the designated area without approval of the Owner's Representative.
- (2) Site Access and Staging Area: Existing unimproved road to be temporarily surfaced for use as the Site Access Road. A ramp will be constructed from the shoulder of the Lone Point Road. Topsoil will be salvaged, and the road temporarily surfaced with Road Stabilization Fabric and six (6) inches of suitable gravel. The road and the ramp will be reclaimed. The Contractor may level or regrade the surface of the staging area to accommodate equipment needs within the designated area. All disturbed area will have topsoil salvaged prior to use and will be reclaimed at the end of the project.
- (3) Clearing and Grubbing: No trees shall be removed from the vegetated island inside of and on the north end of the bermed area, or in the Staging Area unless otherwise approved by the Owner's Representative.
- (4) Decontamination Area: The outside of all equipment must be cleaned of visible tailings material before leaving the designated area within the impoundment (bermed) area.
- (5) Excavation: No tailings (treated or untreated) are to be placed outside of the tailings impoundment (bermed) area. Tailings shall be excavated to underlying native soil as determined by the Resident Project Representative.

(6) Tailings Treatment Using Quicklime: The Contractor shall utilize 3/8 inch minus quicklime containing no less than 97% total calcium oxide for all tailings treatment work. Tailings will be treated with approximately 4% by dry weight quicklime. Quicklime amended tailings shall have a moisture content between two (2) percent (%) below and three (3) percent (%) above optimum moisture content as determined by the Standard Proctor Density Test (ASTM D-698) upon arrival at the Paymaster repository. A 24-hour on-site curing time is required prior to transport to the Paymaster repository.

(7) Backfill: Approximately 900 cubic yards of backfill is in the berm. Approximately 1,000 cubic yards of imported backfill are required to obtain the specified final grade. The berm material will be used for final cover soil on the tailings area, therefore the imported backfill will be placed first, with the berm material placed on top. Backfill shall be placed in lifts not greater than 8 inches in depth and shall be compacted by passing over each lift no less than two (2) times with a tracked vehicle.

(8) Final Grading: The objective of the final grading is to facilitate free drainage of the recontoured surface.

(9) Culvert Installation: A galvanized, corrugated steel pipe twenty-five (25) feet long and twelve (12) inches in diameter shall be placed at the location and elevation shown on Sheet 4 of the drawings such that drainage can occur without harm to the existing roadway. Culvert shall be installed after all tailings have been removed from project site.

ADDITIVE ALTERNATE NO. 1 - LIMESTONE AMENDMENT OF NATIVE SOIL:

Following tailings excavation, the underlying native soils shall be amended in-place to a depth of six inches using limestone (calcium carbonate) at a rate of 20 tons per acre. If saturated conditions exist, this additive alternate may not be executed at the discretion of the Resident Project Representative.

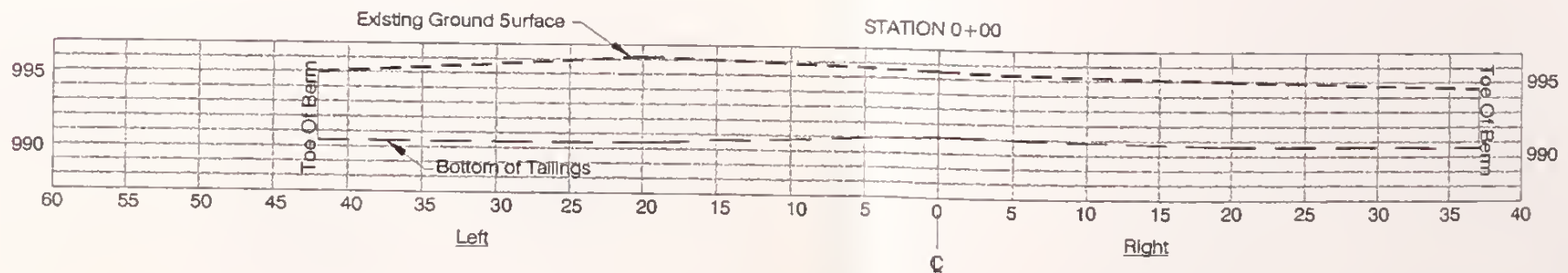
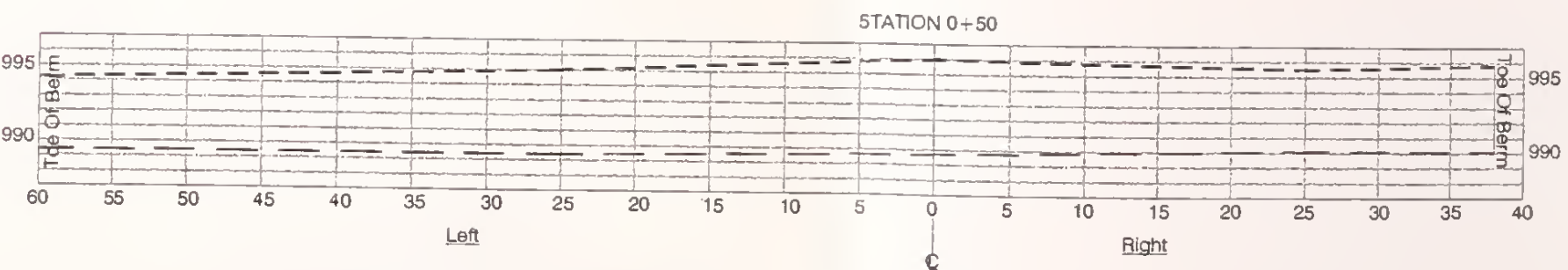
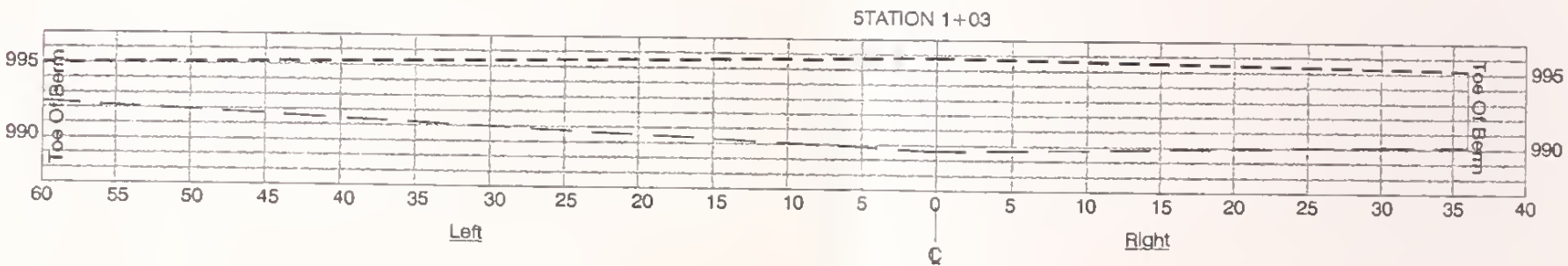
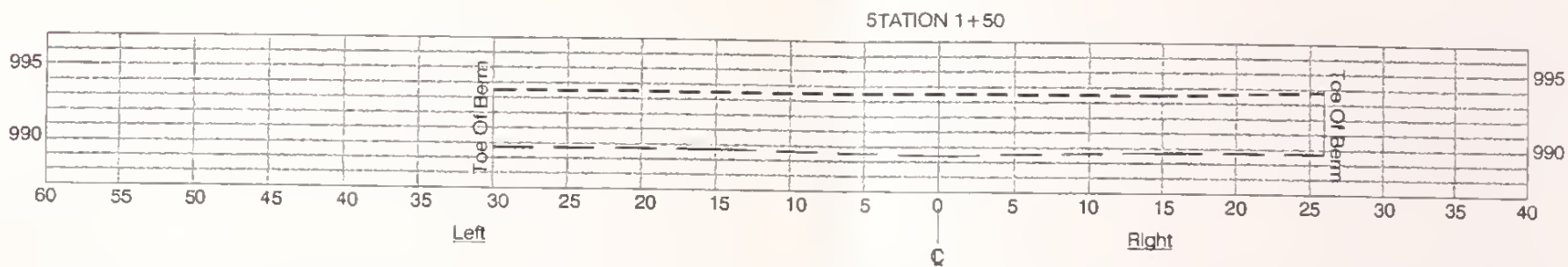
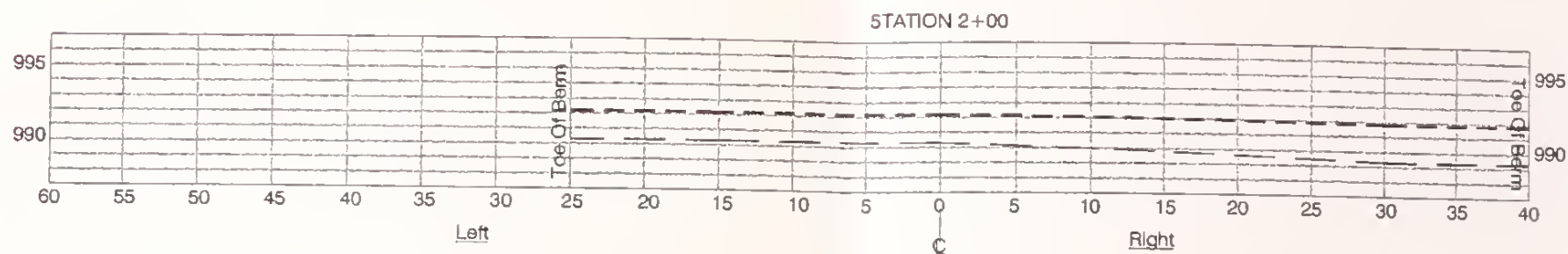
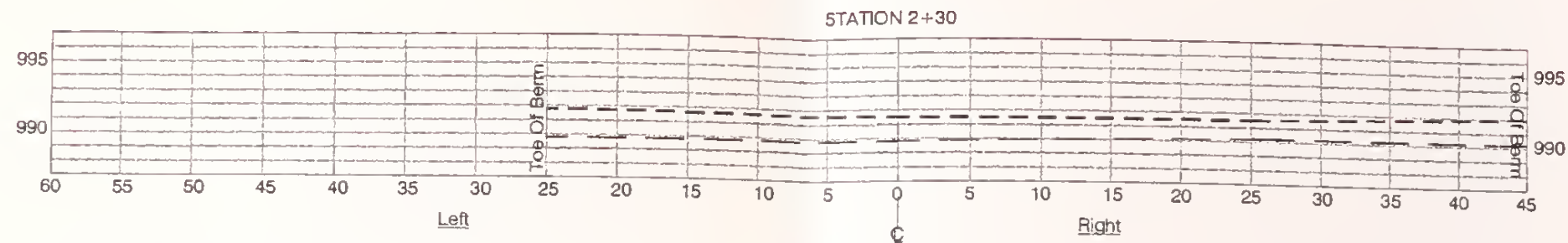


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REV	DATE	DESCRIPTION	DRN BY	APP BY
1	7/3/96	General Revisions	SAS	DO

Date: July 1996 Project #: 947-58 File: Figsurv.dwg Sheet: 2 of 4	Project Title: Montana Abandoned Mine Reclamation Bureau Site Map Blackfoot Tailings SHEET 2
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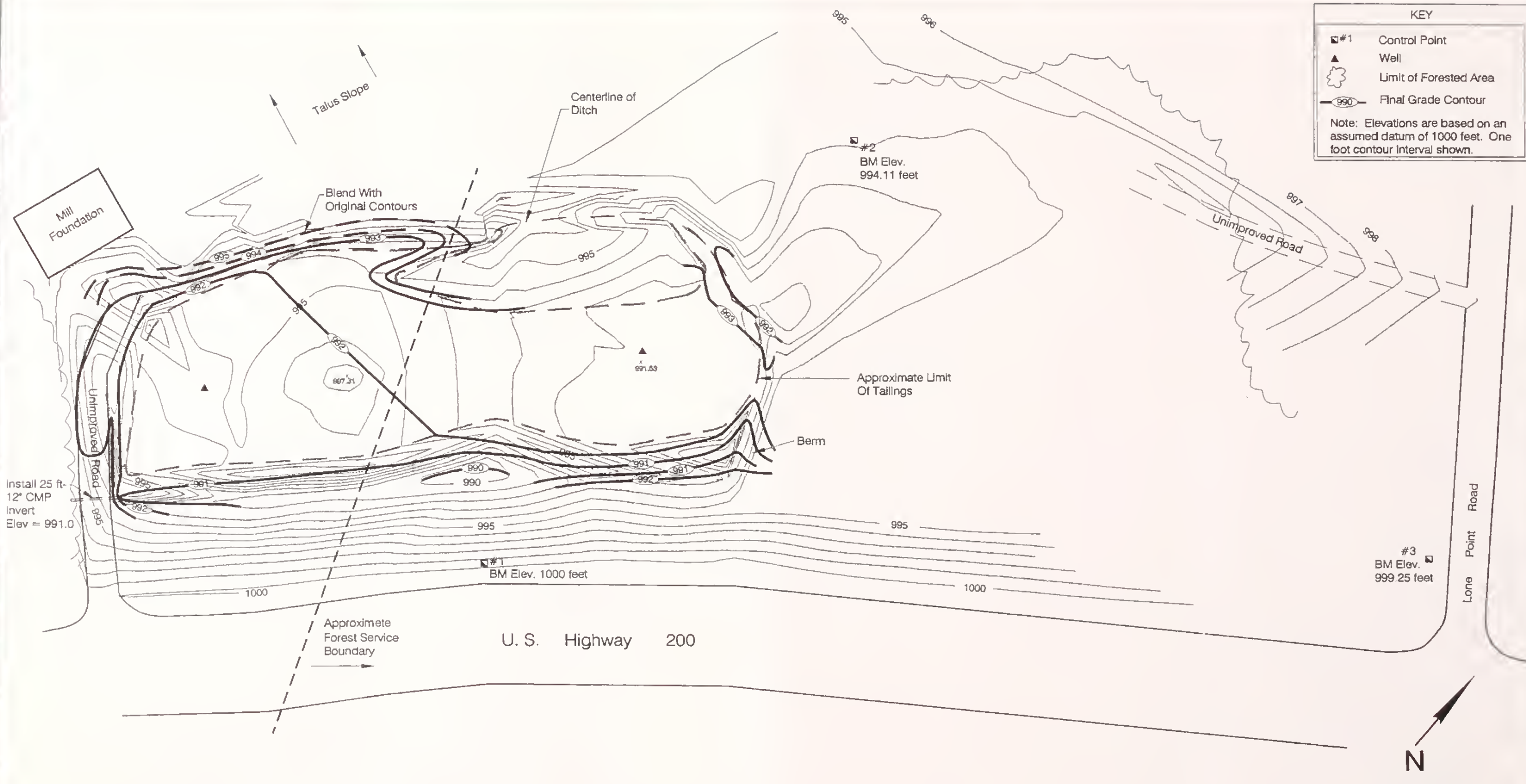
Scale

1" = 11.4 ft

REV	DATE	DESCRIPTION	DRN BY	APP BY

Date: July 1980 Project #: 947-08 File: Junction.dwg Sheet: 3 of 4	Project Title: Montana Abandoned Mine Reclamation Bureau Volume Cross Sections Blackfoot Tailings SHEET 3
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MAXIM
TECHNOLOGIES INC.



KEY

- #1 Control Point
- ▲ Well
- ☼ Limit of Forested Area
- 990 — Final Grade Contour

Note: Elevations are based on an assumed datum of 1000 feet. One foot contour interval shown.



- CONSTRUCTION NOTES:**
- (1) Blend To Existing Contours: The final grade will blend with the existing contours.
 - (2) Final Drainage: The final reclaimed surface in the tailings area will have positive surface drainage such that water will not pond in the area.

REV	DATE	DESCRIPTION	DRN DT	APP DT
1	7/3/96	General Revisions	SAS	DO

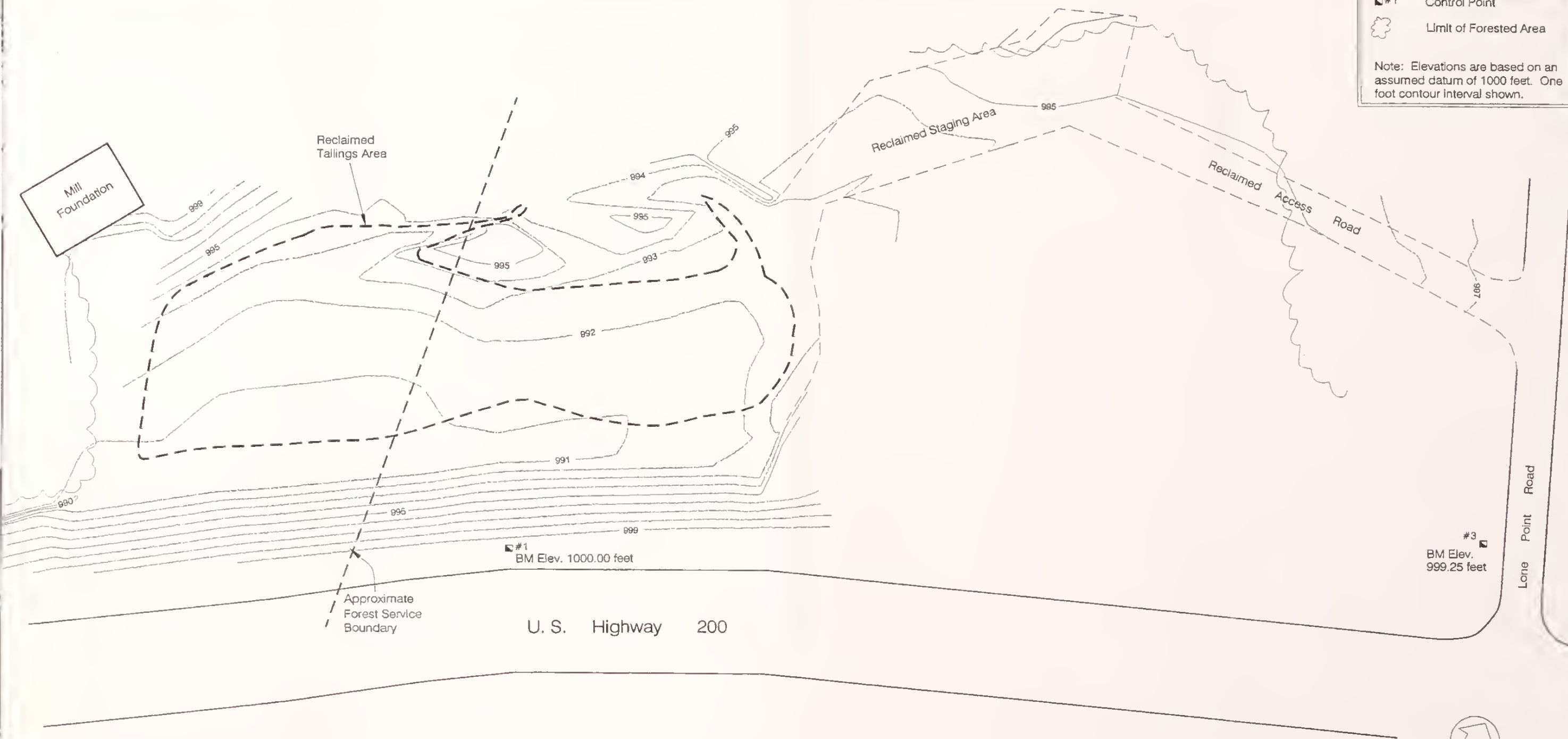
Date: July 1996 Project #: 047-68 File: Grading.dwg Sheet: 4 of 4	Project Title: Montana Abandoned Mine Reclamation Bureau Sheet Title: Final Grading Plan Blackfoot Tailings SHEET 4
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MAXIM
TECHNOLOGIES INC

KEY

-  #1 Control Point
-  Limit of Forested Area

Note: Elevations are based on an assumed datum of 1000 feet. One foot contour interval shown.



0 Feet 50

REV	DATE	DESCRIPTION	DRN BY	APP BY

Date: December 1996		Project Title: Montana Abandoned Mine Reclamation Bureau	
Project #: 947-58		As Built	
File: Asbuilt.dwg		Sheet Title: Final Grade Blackfoot Tailings	
Sheet: 1 of 1		MAXIM TECHNOLOGIES INC	

APPENDIX C

CHANGE ORDERS

Blackfoot Tailings Removal Project

CHANGE ORDER

ORDER NO. 1

PROJECT TITLE: Blackfoot Tailings Removal Project

DEQ-AMRB NO.: 95-004

CONTRACT DATE: 9-18-96

OWNER: State of Montana DEQ-AMRB

CONTRACTOR: Davidson and Company

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
1	Add quicklime to exposed native soils inside the tailing impoundment.	LS	LS	LS	LS	500.00	500.00
TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC.							\$500.00
OVERHEAD & PROFIT @ _____ %							--
GRAND TOTAL - THIS CHANGE ORDER							\$500.00

Original Contract Price	121,290.14
Current Contract Price Adjusted by Previous Change Order	121,290.14
Cost this Change Order (+ or -)	+500.00
New Contract Price including this Change Order	121,790.14

The completion date as set forth in the Contract Documents shall be **unchanged**.

The date for completion of all work will be October 28, 1996.

Description and Justification for Change:

1. **Additive Alternative No. 1** - "Limestone Amendment of native Soil" is not adaptable to the construction sequencing required by this project, therefore, it has been decided the following equivalent method for amending native soils will be performed: A total of 5 tons of quicklime will be applied to the surface of all exposed native soils within the impoundment before placing backfill materials.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$ 500.00 (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$ 500.00 (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

By: _____
Seal

Recommended by: _____
Engineer Date

Accepted by: _____
Contractor Date

Approved by: _____
Owner Date

CHANGE ORDER

ORDER NO. 2

PROJECT TITLE: Blackfoot Tailings Removal Project

DEQ-AMRB NO.: 95-004

CONTRACT DATE: 9-18-96

OWNER: State of Montana DEQ-AMRB

CONTRACTOR: Davidson and Company

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
1	Excavate, treat and transport 4662 CY additional tailings to Paymaster (\$16.05/CY).	LS	LS	LS	LS	74,825.10	74,825.10
TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC.							\$74,825.10
OVERHEAD & PROFIT @ _____%							--
GRAND TOTAL - THIS CHANGE ORDER							\$74,825.10

Original Contract Price	121,290.14
Current Contract Price Adjusted by Previous Change Order	121,790.14
Cost this Change Order (+ or -)	+74,825.10
New Contract Price including this Change Order	196,615.24

The completion date as set forth in the Contract Documents shall be **changed**.

The date for completion of all work will be November 4, 1996.

Description and Justification for Change:

1. **Excavate, treat and transport additional tailings to Paymaster** - Approximately 4662 CY additional tailings will be excavated, treated and transported as described by the construction specifications contained in the Blackfoot Tailings Removal Project Invitation for Bid.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$ 74,825.10 (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$ 74,825.10 (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

By: _____

Seal

Recommended by: _____

Engineer

Date

Accepted by: _____

Contractor

Date

Approved by: _____

Owner

Date

CHANGE ORDER

ORDER NO. 3

PROJECT TITLE: Blackfoot Tailings Removal Project

DEQ-AMRB NO.: 95-004

CONTRACT DATE: 9-18-96

OWNER: State of Montana DEQ-AMRB

CONTRACTOR: Davidson and Company

Change Orders must be accompanied by an itemized cost breakdown. You are hereby requested to comply with the following changes from the Contract Documents. (Show separate costs for materials, labor, equipment, and miscellaneous. Show percent where applicable.)

ITEM NO.	DESCRIPTION OF CHANGES - ESTIMATED QUANTITIES & UNITS	COST OF CHANGES					TOTAL COST
		MAT'LS.	LABOR	EQUIP.	MISC.	TOTAL UNIT COST	
1	Haul and place 1800 CY additional backfill material (\$5.93/CY).	LS	LS	LS	LS	10,674.00	10,674.00
2	Deliver, place and mix 1.5 tons quicklime with exposed native soils along east edge of former impoundment.	LS	LS	LS	LS	500.00	500.00
3	Regrade unimproved road material into former impoundment and construct a drainage trench (6 hrs @ \$85/hr + 3 hrs @ \$65/hr).	LS	LS	705.00	LS	705.00	705.00
4	Delete Culvert Installation Bid Item	LS	(2,932.32)	-	-	(2,932.32)	(2,932.32)
5	Perform mine shaft closure.	LS	LS	LS	LS	450.00	450.00
TOTAL COST - MATERIALS, LABOR, EQUIPMENT & MISC.							\$9,396.68
OVERHEAD & PROFIT @ _____%							-
GRAND TOTAL - THIS CHANGE ORDER							\$9,396.68

Original Contract Price	121,290.14
Current Contract Price Adjusted by Previous Change Order	196,615.24
Cost this Change Order (+ or -)	+9,396.68
New Contract Price including this Change Order	206,011.92

The completion date as set forth in the Contract Documents shall be **changed**.

The date for completion of all work will be November 15, 1996.

Description and Justification for Change:

1. **Haul and Place additional backfill material** - 1800 CY additional backfill material will be hauled from the Hi-Country Beef Jerky pit and placed inside the former impoundment according to the specifications outlined in the Blackfoot Tailings Removal Project Invitation for Bid document.
2. **Deliver, place and mix quicklime with exposed native soils existing beneath eastern berm** - 1.5 tons of quicklime will be delivered, placed and mixed with exposed native soils along the eastern edge of the impoundment. The Work will consist of spreading an even layer of quicklime over an approximate area of 10 feet X 300 feet, and mixing the quicklime with the native soils by discing and tracking prior to application of fertilizer, seed or mulch.
3. **Regrade unimproved road material into former impoundment and construct a trench** - The unimproved road existing at the south end of the former impoundment will be regraded and incorporated into the backfill material inside the impoundment. In order to achieve site drainage, a trench with a minimum of 0.5% slope, approximately 12 inches wide, 3 feet deep and 140 feet long will be constructed at the southeast corner of the impoundment, heading south and terminating in the drainage area designated by the Owner's Representative. A total of 6 hours dozer and 3 hours backhoe equipment use time has been allotted for completion of this item.
4. **Delete Corrugated Pipe Installation** - This item was deleted because completion of final grading eliminated the need for a culvert.
5. **Perform mine shaft closure** - All debris lining the shaft opening located south of the Lone Point Road, including but not limited to steel roofing material, timbers and two inch diameter polyethylene hose, will be removed and disposed of at a licensed landfill. One load (approximately 12 CY) of rip-rap material consisting of 1/2 inch diameter to 10 inch diameter gravels and boulders will be placed in the shaft opening until rock exists approximately 1 foot above ground surface.

SURETY CONSENT

The Surety hereby consents to the aforementioned Contract Change Order and agrees that its bond or bonds shall apply and extend to the Contract as thereby modified or amended per this Change Order. The Principal and the Surety further agree that on or after execution of this consent, the penalty of the applicable Performance Bonds or Bonds is hereby increased by \$ 0.00 (100% of the Change Order amount) and the penalty of the applicable Labor and Material Bond or Bonds is hereby increased by \$ 0.00 (100% of the Change Order amount).

COUNTERSIGNED BY MONTANA
RESIDENT AGENT

SURETY

By: _____ Seal _____

Recommended by: James B. Bousier 11/26/96
Engineer Date

Accepted by: John W. Davidson 11/26/96
Contractor Date

Approved by: _____
Owner Date

APPENDIX D

**PAYMENT REQUESTS, AFFIDAVIT ON BEHALF OF CONTRACTOR,
CERTIFICATE OF COMPLETION, CERTIFICATE OF SUBSTANTIAL
COMPLETION, CERTIFICATE OF ACCEPTANCE, AND CONSENT OF SURETY
COMPANY TO FINAL PAYMENT
Blackfoot Tailings Removal Project**

PAYMENT REQUEST NO. 1

FROM September 18, 1996 TO October 6, 1996

PROJECT TITLE: Big Blackfoot Tailings Removal Project

LOCATION: Lincoln, Montana

DEQ-AMRB NO.: 95-004

NAME OF CONTRACTOR: Davidson & Co.

ADDRESS: P.O. Box 4808, Helena, Montana 59604

SUMMARY OF PROJECT STATUS

Amount of Original Contract		\$ <u>121,290.14</u>
Change Order No. <u> 1 </u>	\$ <u>500.00</u>	
Change Order No. <u> </u>	\$ <u> </u>	
Change Order No. <u> </u>	\$ <u> </u>	
Amount of Approved Change Order(s)		\$ <u> 500.00</u>
TOTAL CONTRACT AMOUNT		\$ <u>121,790.14</u>

Pay Request No.	Amount of Request
1	\$ 39,750.25

Total Contract Amount Completed to Date	\$ <u>44,613.07</u>
Less Retainage (<u> 10 </u> %)	\$ <u> 4,461.30</u>
TOTAL AMOUNT EARNED TO DATE	\$ <u>40,151.77</u>
Less Previous Payments	\$ <u> 0.00</u>
AMOUNT DUE THIS PAYMENT	\$ <u>40,151.77</u>
Less 1% Tax	\$ <u> 401.52</u>
TOTAL DUE CONTRACTOR	\$ <u>39,750.25</u>

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Davidson & Company
Contractor

By _____

Date _____

RECOMMENDED BY:

Maxim Technologies, Inc.
Engineer

By _____

Date _____

APPROVED BY:

Department of Environmental Quality,
Abandoned Mine Reclamation Bureau
Owner

By _____

Date _____

PAYMENT REQUEST NO. 2

FROM October 6, 1996 TO November 18, 1996

PROJECT TITLE: Big Blackfoot Tailings Removal Project

LOCATION: Lincoln, Montana

DEQ-AMRB NO.: 95-004

NAME OF CONTRACTOR: Davidson & Co.

ADDRESS: P.O. Box 4808, Helena, Montana 59604

SUMMARY OF PROJECT STATUS

Amount of Original Contract \$ 121,290.14
Change Order No. 1 \$ 500.00
Change Order No. 2 \$ 74,825.10
Change Order No. 3 \$ 9,396.68
Amount of Approved Change Order(s) \$ 84,721.78
TOTAL CONTRACT AMOUNT \$ 206,011.92

Pay Request No.	Amount of Request
1	\$ 40,151.77
2	\$ 165,860.15

Total Contract Amount Completed to Date \$ 206,011.92
Less Retainage (0 %) \$ 0.00
TOTAL AMOUNT EARNED TO DATE \$ 206,011.92
Less Previous Payments \$ 40,151.77
AMOUNT DUE THIS PAYMENT \$ 165,860.15
Less 1% Tax \$ 1,658.60
TOTAL DUE CONTRACTOR \$ 164,201.55

I certify that this claim is correct and just in all respects and that payment or credit has not been received.

Davidson & Company
Contractor
By John W. Davidson
Date 11/26/96

APPROVED BY:

Department of Environmental Quality,
Abandoned Mine Reclamation Bureau
Owner
By _____
Date _____

RECOMMENDED BY:

Maxim Technologies, Inc.
Engineer
By Jeremiah B. Bousier
Date 11/26/96

Item No.	Description	Contract Quantity	Contract Unit Price	Previous Quantity Requested	Current Quantity Completed	Total Quantity Completed to Date	Total Contract Amount Completed to Date	Amount Due this Payment
1.	Mobilization, Bonding and Insurance	1.0	\$ 31,680.00	31,680.00	0.0	1.0	\$ 31,680.00	\$ 0.00
2.	Clearing and Grubbing	1.0	\$ 5,062.32	10%	90%	100%	\$ 5,062.32	\$ 4,556.09
3.	Excavate, Treat and Transport Tailings to Paymaster	3750.0	\$ 16.05	740	3010.0	3750.0	\$ 60,187.50	\$ 48,310.50
4.	Regrade Berm	900.0	\$ 15.92	0	900.0	900.0	\$ 14,328.00	\$ 14,328.00
5.	Provide Backfill	1000.0	\$ 5.93	0	1000.0	1000.0	\$ 5,930.00	\$ 5,930.00
6.	Install Corrugated Steel Pipe	1.0	\$ 2,932.32	0	0	0%	* \$ 2,932.32	\$ 2,932.32
7.	Fertilize, Seed and Mulch	0.5	\$ 2,340.00	0	0.5	0.5	\$ 1,170.00	\$ 1,170.00
8.	Change Order No. 1	--	--	--	100%	100%	\$ 500.00	\$ 500.00
9.	Change Order No. 2	--	--	--	100%	100%	\$ 74,825.10	\$ 74,825.10
10.	Change Order No. 3	--	--	--	100%	100%	\$ 9,396.68	\$ 9,396.68
					--	--		
TOTALS							\$ 206,011.92	\$ 161,948.69

* Item No. 6, Install Corrugated Steel Pipe, was deducted via Change Order No. 3.

AFFIDAVIT ON BEHALF OF CONTRACTOR

STATE OF Montana)

DEQ-AMRB NO.: 95-004

: ss

COUNTY OF Lewis & Clark)

DATE: November 18, 1996

I certify to the best of my knowledge and belief that all work has been performed and materials supplied in strict conformance with the terms and conditions of the corresponding contract documents between **MDEQ, AMRB**, the Owner, and **Davidson and Company**, the Contractor, dated **September 18, 1996**, for the **Blackfoot Tailings Removal Project**, DEQ-AMRB NO. **95-004**, and further declare that all bills for materials, supplies, utilities, and for all other things furnished or caused to be furnished by the above-named Contractor and used in the execution of the above Contract have been fully paid, and there are no unpaid claims or demands of State Agencies, subcontractors, materialmen, mechanics, laborers or any others resulting from or arising out of work done or ordered to be done by said Contractor under the above-identified Contract.

In consideration of the prior and final payments made and all payments made for authorized changes, the Contractor releases and forever discharges the Owner from any and all obligations and liabilities arising by virtue of said Contract and authorized changes between the parties hereto, either verbal or in writing, and any and all claims and demands of every kind and character whatsoever against the Owner, arising out of or in any way relating to said Contract, and authorized changes.

This statement is made for the purpose of inducing the Owner to make Final Payment under the terms of the Contract, relying on the truth and statements contained therein.

Dated this day of Nov., 19 96, at Helena, Montana.

CONTRACTOR:

DAVIDSON & COMPANY

By: John W. Davidson

Title: Vice Pres. Helms

Subscribed and sworn to before me this 26 day of, 19 96.

E. L. Strick

Notary Public for the State of Montana

Residing at _____

My commission expires _____

(SEAL)

NOTARY PUBLIC for the State of Montana
Residing at Helena, Montana
My Commission Expires August 20, 1998

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CONTRACTOR'S CERTIFICATE OF COMPLETION

TO (Owner): Joel Chavez DATE: November 18, 1996
Department of Environmental Quality PROJECT TITLE: Blackfoot Tailings
Abandoned Mine Reclamation Bureau Removal Project
P.O. Box 202301, Helena, MT 59620 DEQ-AMRB NO.: 95-004
ATTN: Engineer Jeremiah B. Bowser, P.E. CONTRACT DATE: 9-18-96
Maxim Technologies, Inc.
FROM: John Davidson, Davidson and Company
(Firm or Corporation)

This is to certify that I, John W. Davidson, am an authorized official of
DAVIDSON & COMPANY, working in the capacity of
Vice Pres./Trans. and have been properly authorized by said firm or
corporation to sign the following statements pertaining to the subject contract:

I know of my own personal knowledge, and do hereby certify, that the work of the contract described above has been performed, and materials used and installed in every particular, in accordance with, and in conformity to, the Contract Plans and Specifications.

The contract work is now complete in all parts and requirements and ready for your substantial completion inspection.

I understand that neither the determination of the Engineer that the work is complete nor the acceptance thereof by the Owner shall operate as a bar to claim against the Contractor under the terms of the guarantee provisions of the Contract Documents.

CONTRACTOR: DAVIDSON & COMPANY
By: John W. Davidson Title Vice Pres./Trans.

Distribution: 1. Project Manager
2. Field Office
3. File

CERTIFICATE OF SUBSTANTIAL COMPLETION

TO: Joel Chavez OWNER

PROJECT TITLE: Blackfoot Tailings Removal Project

DEQ-AMRB NO.: 95-004

CONTRACT DATE: 9-18-96

LOCATION: Lewis and Clark County, Montana

PROJECT OR PART SHALL INCLUDE: _____

Tailings treatment and removal

CONTRACTOR: Davidson and Company

ADDRESS: P.O. Box 4808

Helena, MT 59604

TELEPHONE NO: (406)443-5210

SUBSTANTIAL COMPLETION DATE: 11-18-96

DEQ INSPECTION DATE: 11-12-96

ENGINEER: Jeremiah B. Bowser, P.E.

Maxim Technologies

PERFORMANCE BOND NO: _____

DATE OF BOND: _____

SURETY: _____

MONTANA AGENT: _____

ADDRESS: _____

The Work performed under this Contract has been inspected by authorized representatives of the Owner, Contractor, and Engineer, and the Project (or specified part of the Project, as indicated above) is hereby declared to be substantially completed on the above date.

DEFINITION OF SUBSTANTIAL COMPLETION

The date of substantial completion of a project or specified area of a project is the date when the construction is sufficiently completed, in accordance with the contract documents, as modified by any change orders agreed to by the parties, so the Owner can occupy or utilize the project or specified area of the project for the use for which it was

A tentative list of items to be completed is appended hereto. This list may not be exhaustive, and the failure to include an item on it does not alter the responsibility of the Contractor to complete all the Work in accordance with the Contract Documents.

ENGINEER: Maxim Technologies, Inc.

By Jeremiah B. Bowser 11/26/96
Authorized Representative Date

The Contractor accepts the above Certificate of Substantial Completion and agrees to complete and correct the items on the tentative list within the time indicated.

CONTRACTOR: Davidson and Company

By John W. Davidson 11/26/96
Authorized Representative Date

The Owner accepts the Project or specified area of the Project as substantially complete and will assume full possession of the project or specified area at _____ (time), on _____ (date). The responsibility for heat, utilities, security, and insurance under the Contract Documents shall be as set forth under "Remarks" below.

OWNER: MDEQ-AMRB

By _____
Authorized Representative Date

Remarks: (Attach additional sheet, if necessary)

CERTIFICATE OF ACCEPTANCE

TO: Joel Chavez MDEQ-AMRB OWNER

PROJECT TITLE: Blackfoot Tailings Removal Project

DEQ-AMRB NO.: 95-004

CONTRACT DATE: 9-18-96

LOCATION: Lewis & Clark

County, Montana

PROJECT OR PART SHALL INCLUDE: _____

Tailings Treatment and Removal

CONTRACTOR: Davidson & Company

ADDRESS: P.O. Box 4808

Helena, MT 59604

TELEPHONE NO: (406)443-5210

FINAL ACCEPTANCE DATE: 11-18-96

DEQ INSPECTION DATE: 11-12-96

ENGINEER: Jeremiah B. Bowser, P.E.

Maxim Technologies, Inc.

PERFORMANCE BOND NO: _____

DATE OF BOND: _____

SURETY: _____

MONTANA AGENT: _____

ADDRESS: _____

The Work performed under this Contract has been inspected by authorized representatives of the Owner, Contractor, and Engineer, and the Project (or specified part of the Project, as indicated above) is hereby declared to be totally completed and accepted on the above date.

ENGINEER: Maxim Technologies, Inc.

By Jeremiah B. Bowser 11/22/96
Authorized Representative Date

The Contractor accepts the above Certificate of Acceptance and agrees to abide by the conditions of the one-year warranty period which began on the substantial completion date.

CONTRACTOR: Davidson and Company

By John W. Davidson 11/26/96
Authorized Representative Date

The Owner accepts the Project as totally complete, and final payment is due to the Contractor as provided in the contract documents.

OWNER: MDEQ - AMRB

By _____
Authorized Representative Date

**CONSENT OF
SURETY COMPANY
TO FINAL PAYMENT**

(From AIA Document G707)

OWNER	<input type="checkbox"/>
ENGINEER	<input type="checkbox"/>
CONTRACTOR	<input type="checkbox"/>
SURETY	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

PROJECT: Blackfoot Tailings Removal Project
(name, address) Lewis & Clark County, Montana

TO (Owner)

Joel Chavez
MDEQ-AMRB
P.O. Box 202301
Helena, MT 59620-2301

DEQ-AMRB NO.: 95-004

CONTRACT FOR: Tailings
treatment and removal
CONTRACT DATE: 9-18-96

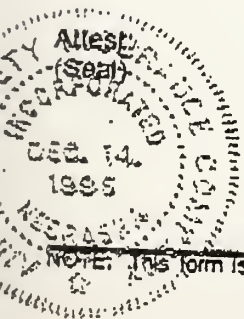
CONTRACTOR: Davidson and Company

In accordance with the provisions of the contract between the Owner and the Contractors indicated
above,the AMWEST SURETY INSURANCE COMPANY

(here insert name and address of Surety Company) . SURETY COMPANY, on bond

of DAVIDSON & COMPANY CONTRACTOR, hereby approves of the final
(here insert name and address of Contractor)payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the
SuretyCompany of any of its obligations to STATE OF MONTANA . OWNER, as set
(here insert name and address of Owner)
forth in the said Surety Company's bond.IN WITNESS WHEREOF, the Surety Company has hereunto set its hand this 26TH day of
NOVEMBER , 19 96 .AMWEST SURETY COMPANY
Surety CompanyKaryl A. Richter
Signature of Authorized RepresentativeKARYL A. RICHTER, ATTORNEY IN FACT

Title



NOTE: This form is to be used as a companion document to the Affidavit on Behalf of Contractor (current edition).

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APPENDIX E

**PHOTOGRAPHIC RECORD
Blackfoot Tailings Removal Project**

BLACKFOOT TAILINGS REMOVAL PROJECT

PHOTOGRAPHIC RECORD

PRINT NUMBER	DATE	FACING	DESCRIPTION
1	11/17/95	West	Tailings impoundment
2	11/17/95	North	Tailings impoundment
3	09/18/96	East	Stripping topsoil along access road
3	09/18/96	East	Stripping topsoil along access road
5	09/18/96	North	Topsoil stockpile from staging area
6	09/18/96	East	Leveling access road
8	09/18/96	West	Placing road stabilization fabric
8	09/18/96	West	Placing road stabilization fabric
9	09/19/96	East	Placing road stabilization fabric
10	09/19/96	Northeast	Placing road stabilization fabric
11	09/19/96	East	Access ramp off Lone Point Road
12	09/23/96	Northwest	Removing tailings from channel
13	09/23/96	North	Removing tailings from channel
14	09/23/96	East	Tailings in channel
19	09/23/96	Northwest	Dozer stuck in tailings
19	09/23/96	Southeast	Dozers stuck in tailings
17	09/24/96	North	Removing tailings from channel
19	09/24/96	East	Removing tailings to native soils
19	09/25/96	West	Quicklime amended native soils
20	09/26/96	Northeast	Tailings beneath earthen berm
21	09/26/96	South	Tailings beneath vegetated island
22	09/26/96	Northeast	Stockpiled quicklime

PRINT NUMBER	DATE	FACING	DESCRIPTION
23	09/26/96	South	Treatment of first lift
24	09/27/96	North	Treatment area and decon area
25	10/01/96	Southeast	treated tailings stockpile, quicklime stockpile
26	10/01/96	South	Spreading quicklime on lift
27	10/03/96	West	Spreading quicklime on lift
28	10/03/96	East	Treated tailings placed at Paymaster Repository
29	10/03/96	West	Unloading at Paymaster Repository
30	10/03/96	East	Truck loading at Blackfoot Tailings
31	10/03/96	North	Archeologists sifting topsoil stockpile
32	10/03/96	East	Typical archeological test pit
33	10/03/96	East	Loading truck
34	10/08/96	North	Treatment of a lift
35	10/18/96	South	Treatment area
36	10/25/96	West	Tailings placed at Paymaster Repository
37	10/25/96	Northwest	Tailings placed at Paymaster Repository
38	10/31/96	Southwest	Clearing and Grubbing
39	10/31/96	Southwest	Recontouring southwest edge of earthen berm
40	10/31/96	Southeast	Southeast edge of earthen berm before recontouring
41	11/18/96	South	Partially recontoured area
42	11/11/96	South	Discing quicklime treated native soils along east edge of former impoundment
43	11/14/96	South	Reclaimed access road
44	11/14/96	Northwest	Reclaimed staging area
45	11/14/96	South	Trench at south end of former impoundment
46	11/14/96	Northwest	Reclaimed tailings impoundment

